

Document 81, Dennis Donnelly, Pocatello, ID  
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B. Waste Form

81-2 [The physical/chemical structure of radioactive waste to be disposed of must meet demanding criteria of long-term stability and non-dispersability to ensure its safety in transport and disposal III.D.2.c(4) site. DOE has considered glass and concrete forms, but glass is not as stable as it needs to be: in a radiation environment, glass becomes friable and tends to break down into dispersable fine powder. So does concrete, even without radiation.]

81-3 [Have you considered crystalline silicon? Silicon is abundant in the earth's crust, and when high purity is not required, need not be too expensive. When molten, silicon is practically a universal solvent, meaning it could dissolve every piece of radioactive material you have. When it solidifies, even with dissolved impurities, it forms a stable permanent material. Large amounts of dissolved impurities would tend to be concentrated at the boundaries between the microcrystals upon cooling to a solid, and thus be subject to leaching over time, but this can be prevented by site selection which excludes water. Waste bearing silicon ingots should be mechanically stable over geologic time periods, period. Silicon crystal conducts heat very well.]

Furthermore, the silicon approach is one which should remove the need to characterize all the different types of radioactive waste into separate classifications and treat them separately. All the waste should just go into the silicon ingots and thence to a safe repository.]

81-4 [I seriously ask that you leave NO radioactive wastes in Idaho or elsewhere in America, we just have no place for it that is long-term safe.] So I request that you dig up, process into silicon ingots, and remove all the radioactive materials at the Idaho NRTS/INEL/INEEL site.

81-5 I request that you create a fully contained, mobile furnace that could safely create stable ingots from the radioactive waste here, and then move this furnace to the other sites and repeat the same process there. A containment structure to fully contain, filter and reprocess the offgases should be the only nonmovable structure involved. The EBR-II dome could do this job.]

*Dennis Donnelly*

Dennis Donnelly

CC: Blaine Edmo, Fort Hall Tribal Council  
Anne Minard, Idaho State Journal

Document 82, U.S. Department of the Interior (Preston A. Sleeper), Portland, OR,  
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IN REPLY REFER TO:

ER 00/0062

Mr. T.L. Wichmann  
U.S. Department of Energy  
Idaho Operations Office  
ATTN: Idaho HLW & FD EIS  
850 Energy Drive, MS 1108  
Idaho Falls, Id. 83401-1563

Dear Mr. Wichmann:

On March 14, 2000 the Department of the Interior (Department) sent you a letter, regarding the Draft Environmental Impact Statement for the Idaho High-Level Waste and Facilities Disposition, Idaho National Engineering and Environmental Laboratory (INEEL), Butte, Jefferson, Bingham and Bonneville Counties, Idaho, in which we stated that we did not have any comments to offer. Since that letter was sent the Department of Energy (DOE) extended the comment period and the Department is now providing the following comments for your use in preparing the Final Environmental Impact Statement. The March 14, 2000 no comment letter should be disregarded.

The Department has the following concerns regarding the air quality impact assessment for Yellowstone and Grand Teton National Parks (NP), and Craters of the Moon National Monument (NM), areas protected as Class I under the Clean Air Act:

- 82-1 1) [DOE should use the EPA CALPUFF modeling system at least in the "screening mode" to address impacts to Class I increments and the NAAQS at Yellowstone and Grand Teton NPS.]  
VIII.B(2)
- 82-2 2) [DOE should use the CALPUFF modeling system to address total deposition of sulfur and nitrogen to the three Class I areas.]  
VIII.B(2)
- 82-3 3) [DOE should address far field visible haze impacts at the three Class I areas.]  
VIII.B(2)
- 82-4 4) [All dispersion modeling for NPS areas as well as all other areas should use the on-site surface meteorological data with concurrent NWS upper air data.]  
VIII.B(2)

HLW & FD EIS PROJECT - (AR)/PF  
Control # DC-82

United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
500 NE Multnomah Street, Suite 356  
Portland, Oregon 97232-3036



April 14, 2000

82-5  
VIII.B(2)

The proposed Idaho National Engineering and Environmental Laboratory (INEEL) Idaho High-level Waste & Facilities Disposition would be located 23 miles (37 kilometers (km)) east of Craters of the Moon National Monument (NM), 93 miles (150 km) southwest of Yellowstone National Park (NP) and 95 miles (153 km) west southwest of Grand Teton NP, all are Federal mandatory Class I areas administered by the National Park Service (NPS). The DEIS examines impacts from the proposed nine alternatives only to Craters of the Moon NM, but not Yellowstone or Grand Teton National Parks. Because several of the proposed alternatives exceed the significant emission rate of pollutants regulated under the Clean Air Act, the Department recommends that the impacts from the criteria pollutants to these two parks also be addressed in the DEIS.

DEIS should address the impacts of three pollutants on Yellowstone and Grand Teton National Parks, specifically addressing impacts from the proposed alternatives whose emissions would exceed:

- Greater than 40 tons per year (TPY) of sulfur dioxide (SO<sub>2</sub>)
- Greater than 40 TPY of nitrogen oxides (NO<sub>x</sub>)
- Greater than 15 TPY of particulate matter (PM<sub>10</sub>)

82-6  
VIII.B(2)

The impact analysis should include a state whether the alternatives would be in compliance with the National Ambient Air Quality Standards (NAAQS) and Class I PSD increments for each of the alternatives that will emit pollutants. The INEEL impact analysis should follow the guidance found in the EPA document Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 2 Summary Report and Recommendations for Modeling Long Range Transport and Impacts (EPA-454/R-98-019, December 1998). This EPA guidance recommends that the EPA

82-7  
VIII.B(2)

CALPUFF model be used either in the screening mode or in the refined mode when modeling long-range transport beyond 50 km. The EPA no longer recommends the model used in the DEIS, Industrial Source Complex Short Term (ISCST3) model, to analyze air quality impact analyses at distances beyond 50 km.

82-11  
VIII.B(2)

The DEIS should also examine the impacts at the Class I areas to air quality related values (AQRVs) such as visibility and acid deposition to lakes, from the proposed alternatives with significant emissions. The DEIS does contain a coherent near field visibility analysis using the EPA VISCREEN model for Craters of the Moon NM. This analysis indicates that there will not be a coherent plume impact from any of the alternatives at Craters of the Moon NM. The Department requests sources locating greater than 50 km from its Class I areas conduct a far-field visible-haze analysis instead of a plume analysis. A far-field visible-haze analysis needs to be performed for the impacts from the alternatives to both Yellowstone and Grand Teton NPs. The far-field haze-visibility analysis should follow the procedures described in the IWAQM Phase 2 report. Since the distance from the INTEC area of INEEL is greater than 50 km from the western portion of Craters of the Moon NM, a far-field visibility analysis also needs to be performed for the monument. The NPS will provide DOE with the background extinction values for the three Class I areas to be used in the far-field visibility analysis.

82-9  
VIII.B(2)

The Department also requests that the DEIS analyze the impacts of acid deposition to lakes at Grand Teton NP from the different alternatives with significant emission rates of criteria

pollutants. The generalized descriptions found in Chapter 5 of the DEIS are inadequate for the Department to make an informed decision regarding acid deposition impacts. The Department requests that the deposition analysis contain the impacts of total nitrogen (N) and total sulfur (S) from the various alternatives. The INEEL analysis should follow recommendations found in the EPA IWAQM Phase 2 report. Background information to assist DOE in addressing deposition impacts to Grand Teton NP can be found in the NPS document, Assessment of Air Quality and Air Pollutants Impacts in National Parks of the Rocky Mountains and Northern Great Plains, August 1998, NPS D-657.

82-10  
VIII.B(2)

The Department recommends changing the source for the meteorological data used in all of the DEIS's modeling analyses for both near- and far-field. As described in Appendix C.2 of the DEIS, the air quality analyses applied two years of on-site surface meteorological data and climatic averaged upper air data to calculate the impacts from the nine different alternatives of the proposed project. The Department believes that using "climatic averaged" mixing heights is not appropriate for a project of national importance, especially considering the inexpensive cost of computing resources today. The Department recommends that DOE should purchase, for a few hundred dollars, concurrent National Weather Service (NWS) upper air data which is available through the National Climatic Data Center in Asheville, North Carolina. We believe that the concurrent Salt Lake City mixing height data would be most representative, but defer this opinion to the recommendations of the State of Idaho and the U.S. EPA.

We thank you for the opportunity to comment on this DEIS. The NPS Air Resources Division (ARD) is available to provide technical assistance to DOE for any of the Class I issues. For further information, or to set up a meeting, please contact John Notar of the NPS ARD at (303) 969-2079.

Sincerely,



Preston A. Sleeper  
Regional Environmental Officer

- New Information -

Idaho HLW & FD EIS